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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

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APPLICATION No.: 10/038,235
FILED: October 19, 2001
APPLICANTS: Scott A Rice
TITLE: METAL WOOD GOLF CLUB HEAD
GROUP ART UNIT: 3711
EXAMINER: Thanh P. Duong
ATTY. DOCKET No.: C01-02

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Ex parte: Rice
Appeal No. _____

BRIEF ON APPEAL

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D. Michael Burns
Patent Agent
Acushnet Company
333 Bridge Street
Fairhaven, MA 02719
(508) 979-3563

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BRIEF ON APPEAL UNDER 37 C.F.R. § 1.192

1. REAL PARTY IN INTEREST

The real party and interest in this Application is the Assignee, Acushnet Company, of Fairhaven, Massachusetts.

2. RELATED APPEALS AND INTERFERENCES

There are no related appeals or interferences known to Appellants, Appellants' legal representative, or Assignee that will directly affect, be directly affected by, or have a bearing on the Board's decision in the pending appeal.

3. STATUS OF CLAIMS

Claims 1, 5-18, and 21-23, are pending and subject to this appeal. Claims 1, 5-18, and 21-23, showing amendments made thereto during prosecution, are attached as Appendix A.

4. STATUS OF AMENDMENTS

The amendments filed on April 11, 2003, in response to the Office Action mailed January 30, 2003, were entered by the Examiner, as noted in the Final Office Action mailed July 1, 2003.

The response to the Final Office Action mailed September 26, 2003, were not seen as persuasive by the Examiner. The new amendments only corrected improper antecedent basis and proper claim dependency due to the cancellation of some claims. No new matter was introduced. For the Appeal Brief, claims 24-29, which were directed to the weight element, have been cancelled without prejudice. As such, the claims on appeal are 1, 5-18, and 21-23, as amended on April 11, 2003, and amended, so as to be put into better condition for allowance, on September 26, 2003.

5. SUMMARY OF INVENTION

Referring to FIGS. 1-2, there is provided a golf club head **10**, which is integrally formed by welding and combining the edges of a body **11** with an impact insert **12**. The body **11** includes a crown portion **14**, a sole plate **15**, a heel portion **16**, a toe portion **17**, a skirt portion **18** and a face perimeter **19**. The body also includes a hosel **20** that extends from heel portion **16**. The hosel **20** includes a bore defining a centerline axis **A-A**. (Specification at page 4, lines 14-20).

In accordance with the invention, an opening **21**, that in one embodiment is substantially oval shaped, is defined within face perimeter **19** for receiving impact insert **12**. A plurality of chads **22**, being in alignment with an inner surface **23** of body **11** provide a pocket within opening **21** for receiving the impact insert **12** which is therein integrally connected by welding. Insert **12** is preferably formed of high strength material and can be cast, forged or stamped sheet metal. Most preferably the insert is stamped sheet metal, and for one embodiment preferably made from a titanium alloy. (Specification at page 4, lines 21-27)

In the present invention, the edges **27** of face perimeter **19** are as thin as possible, while still maintaining structural integrity. Preferably the thickness (**T1** at the sole/face transition junction **29** and **T4** at the crown/face transition junction **28**) is approximately the same and is less than 0.11 inches. More preferably, they are less

than 0.09 inches and most preferably approximately 0.08" for maximum COR values. (Specification at page 5, lines 11-15)

In a preferred embodiment of the present invention, the body **11** includes a face perimeter section **19** that extends from the crown portion **14** over a distance (denoted as $\Delta 1$ in the drawings), of at least about 0.15 inches, and also over a distance of about 0.15 inches from the sole plate **15** ($\Delta 2$ in drawings). The welds **30** of impact insert **12** to body **11** will be conducted at a suitable distance from the transition junctions **28** and **29**. The dimensions of both $\Delta 1$ and $\Delta 2$ preferably should not less than 0.20 inches. This construction allows for thin shell thickness at the crown/face transition junction **28** and sole/face transition junctions **29**. The thinness of these sections help increase the club head's COR value that extrapolates into greater distance. (Specification at page 5, lines 16-24)

6. ISSUES

The sole issue on appeal is whether the Examiner has established a prima facie case of obviousness under 35 U.S.C. § 103 in rejecting claims 1, 5-18, and 21-23, as being unpatentable over U.S. Patent No. 6,354,962 to Galloway *et al.* ("Galloway").

7. GROUPING OF CLAIMS

Claims 1, 5-18, and 21-23, should be reviewed on appeal. The independent claim 1, and the dependent claims 5-18, and 21-23, should be considered as a group and should stand or fall together. Appellant's arguments will therefore, be directed to claims 1, 5-18, and 21-23.

8. ARGUMENT

Claims 1, 5-18, and 21-29, were rejected under 35 U.S.C. § 103(a) as as being unpatentable over Galloway, as the Examiner set forth in the Final Office action mailed July 1, 2003. The Examiner specifically addressed this rejection on pages 2-4 of the Final Office Action, and page 2 of the Advisory Action, as cited below:

"Regarding claims 1, 6-11, 13-15, and 17-23, Galloway *et al.* discloses a golf club head 42, having a volume of 400cc, (Abstract) adapted to a shaft 48 comprising: a hollow body 46 welded to an oval shaped titanium face plate 72 (Col. 5, lines 51-65) or impact

insert having a variable thickness ranging from 0.110-0.09 inch (Col. 8, lines 10-34); a body including a heel portion, a toe portion, a crown portion, a sole plate, a skirt portion, a hosel 54 extended from heel portion, weighted elements 122 and 123, and face extension 74 (Figures 10 and 12-12a). The face extension 74 with 0.2-1.0 inch from the face plate (Col. 6, lines 39-44) includes an upper lateral extension 76 and a lower lateral extension 78. Such face extension is functionally equivalent to the transition junction. Regarding claim 6, it appears that the upper and lower lateral extension has a thickness sufficient to support the face plate 72 but thin enough to maximize COR. With respect to the method of fabricating the metal insert, Official Notice is taken that using stamped process to form the metal insert is old and well known in the art. Regarding claim 8, it appears as shown in Figure 5 that the bulge face plate have at least two different radii for the exterior and interior. Regarding claim 12, Official Notice is taken that such titanium materials are known in the art and it would have been obvious to use such material here to maximize club head strength and club head volume. Regarding claim 16, Official Notice is taken that it is known in the art to provide various loft angles and it would have been obvious to do so here to control spin rate and distance.”

“Applicant’s arguments with respect to claims 1-23 have been considered but are moot in view of the new ground(s) of rejection”.

“In response to arguments of claims 24-27, Applicant argues that Gallaway does not disclose an oval insert. Gallaway clearly shows a face plate or insert having an oval shape.

The Examiner also made the following statement in the Examiner’s Advisory Action.

“The request for reconsideration is not persuasive. With respect to the face extension 74, Gallaway discloses the importance of having such face extension to provide a smooth transition junction so that the welding zone is moved rearwardly not at the crown/face or face/sole, which will minimize stress at the junction upon ball’s impact. Such configuration of the face extension improves COR while other prior art has no such face extension. One example of such prior art is USPN 5,954,596. USPN ‘596 (not applied in art rejection) also shows the transition junction (T3) between the face/crown and face/sole.”

Applicant’s Response to Examiners Arguments

Appellants respectfully submit that the Examiner has not established a *prima facie* case of obviousness and has, therefore, erred in the rejection of appealed claims 1, 5-18, and 21-23, for the reasons fully-developed below.

I. **A Prima Facie Case Of Obviousnes HAS NOT BEEN ESTABLISHED**

As set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 U.S.P.Q. 459 (1966), factual inquiries must be made to establish a background for determining obviousness under 35 U.S.C. § 103. These factual inquiries include determining the scope and content of the prior art along with the differences that exist between the prior art and the claimed invention. Once these inquiries have been made and this factual background has been established, the law under 35 U.S.C. § 103 requires that a claimed invention be considered “as a whole” in making an obviousness determination. *Shenck v. Norton Corporation.*, 218 U.S.P.Q. 698 (Fed. Cir. 1983). The burden is on the Examiner to establish a *prima facie* case of obviousness and, until then, the burden does not shift to the Applicant. *In re Bell*, 991 F.2d 781, 783, 26 U.S.P.Q.2d 1529, 1530 (Fed. Cir.1993).

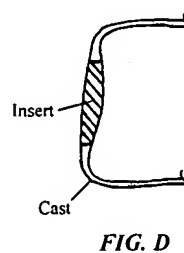
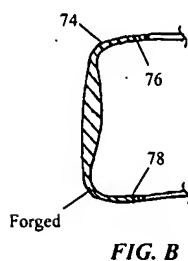
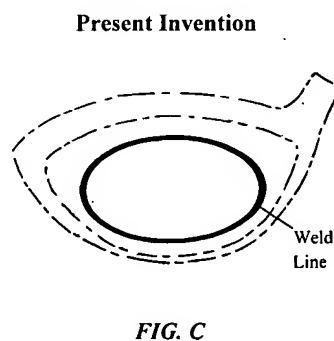
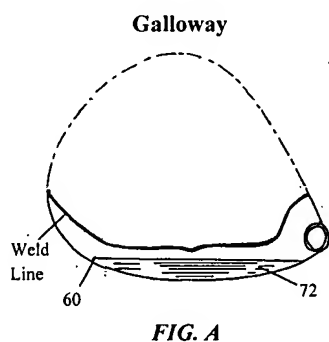
Considering Appellants’ invention as a whole, the reference of Galloway, and the supporting arguments made by the Examiner fail to establish a *prima facie* case of obviousness. The cited references do not disclose or suggest every element of independent claim 1, and in fact, Galloway, *teaches away* from the elements of this claim.

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, the prior art reference must suggest to one of ordinary skill in the art that they should make the claimed invention. *In re Vaeck*, 947 F.2d 488, 493, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991). Second, one of ordinary skill in the art must have a reasonable expectation of success in making the claimed invention based on the revelations contained in the prior art reference. *Id.* Finally, the prior art reference must teach or suggest all the claim limitations. *Id.* The suggestion to make the claimed invention and the reasonable expectation of success in making it must be found in the prior art reference and not in Applicant’s disclosure. *Id.*

For at least two of the above reasons, a *prima facie* case of obviousness has not been established. First, Galloway fails to teach or suggest all claim limitations of the first group of claims of the present invention, namely a golf club head that has a substantially oval shaped stamped metal impact insert, a face perimeter having an opening of a configuration for receiving the stamped metal impact insert thereby

removing the welding from the body of the club head into the club head impact face area, and upper and lower sections of the face perimeter forming transition junctions with the crown portion and sole plate. (Claim 1)

In the Examiner's above argument, the Examiner states "Galloway et al. discloses a golf club head 42, having a volume of 400cc, (Abstract) adapted to a shaft 48 comprising: a hollow body 46 welded to an oval shaped titanium face plate 72 (Col. 5, lines 51-65) or impact insert having a variable thickness ranging from 0.110-0.09 inch (Col. 8, lines 10-34)". The Examiner also stated in the Final Office Action that "Galloway clearly shows a face plate or insert having an oval shape". This is a significant misinterpretation of what Galloway teaches. Galloway does not disclose, nor suggest, the use of an insert. As for the shape of Galloway's face plate, it appears to be of a generally elliptical shape, and definitely void of any insert. It is to be appreciated that the Applicant does not claim an oval shaped face plate, but rather claims an oval shaped stamped metal impact insert, which is therein inserted into the face plate.



The above FIGS. A-D, have been presented to help clarify the differences between Galloway and the present invention. Galloway teaches: "The face member 60 is generally composed of a single piece of metal, and is preferably composed of a forged metal material". (Column 5, lines 51-53) Galloway also teaches that "The face

member 60 generally includes a face plate (also referred to herein as a striking plate) 72 and a face extension 74 extending laterally inward from the perimeter of the face plate 72." (Col. 5, lines 59-62) The Applicant has included Figs. A and B above, to show that Galloway's face member 60 is a one piece forged construction with an integral face plate 72, and definitely does not contain an insert. For Galloway to have an insert in the face plate, the drawings would have to show an opening for the insertion of the insert. The oval shape of the insert (As seen in FIG. C.) is a key design concept of the Applicant's invention, and it must be stressed that the insert does not follow the generally elliptical shape of the face plate.

Although, it is recognized that specific distances be maintained between the transition junctions and the perimeter opening in order to maximize COR and a sweet spot zone, it is also critical that greater distances are required at the heel and toe points. In the present invention, the placement of the insert perimeter at a distance of at least 0.20 inch from the transition junction is important in maximizing the spring effect produced. The upper and lower sections of the face perimeter of the present invention are appreciably thinner than the insert thickness. The thin upper and lower sections, and thin transition junctions of the present invention are formed by a cast body, and not a forged face member 60 as taught by Galloway. The minimum 0.20 inch of the upper and lower sections of the present invention are directly related to COR and the "Sweet Spot Zone". If this 0.20 inch distance is reduced, then the resultant COR will be reduced. However, if this 0.20 inch distance is increased, then the size of the oval insert is proportionally reduced, and thereby reducing the size of the sweet spot zone (not a desired result for the club head of the present invention). One of the reasons, for the oval shape of Applicant's insert, is that in the make-up of a golf club head, the areas of greatest stiffness of the face plate are located at the toe and heel points. If the Applicant's insert followed the elliptical natural contour shape of the face plate, as is customary in the prior art, the distance between the perimeter opening and these stiff points would be less than that of the present invention, and thus would have a negative effect upon the flexibility of the face plate. That is why the Applicant's insert is oval and does not follow the natural contour of the face.

In response to the Applicant's claiming upper and lower sections of the face perimeter forming transition junctions with the crown portion and sole plate (Claim 1), the Examiner states in the Final Office Action that: "The face extension 74 with 0.2-1.0 inch from the face plate (Col. 6, lines 39-44) includes an upper lateral extension 76 and a lower lateral extension 78. Such face extension is functionally equivalent to the transition junction." This last sentence is ambiguous. The only similarities between the club head of the present invention and that of Galloway, is that they both recognize that moving weld away from the transition junctions (cited as "crown/face plate radius region" col. 6, line 49 in Galloway) is a good design concept for maximizing COR. However, their means for achieving this result are diametrically opposite, and one skilled in the art certainly would not find them as functionally equivalent.

The transition junctions of Galloway are integrally part of a forged face member 60, whereas in the present invention they are integrally part of a cast body. The Applicant places the weld in the vertical face plate around a perimeter opening which connects a much thicker and heavier stamped metal insert to the very thin cast body. Therein the deflection which is correlated to the "spring effect" is enhanced by placing the weld at this location. Galloway, however, places the weld rearward into the crown and sole, wherein the forged face member is connected to the body by welding around the entire body of the club head. This is far more costly than the Applicant's means for welding and the savings in weight due to less welding allows the Applicant to redistribute the saved weight into more advantageous positions on the club head. Also, not having to place the weld in the crown area, the Applicant eases the aesthetic problems associated with polishing the critical crown area. The Applicant respectfully must disagree with the Examiner's determination that such divergent construction designs are functionally equivalent. In view of the fact that the present invention employs a thin cast metal at the site of the transition junctions, while Galloway utilizes a forged metal at these junctions, the Applicant requests that the Examiner provide some evidence or scientific reasoning to establish reasonableness of the Examiner's belief that the functionality of the present invention is an inherent characteristic of Galloway. *Ex parte Skinner*, 2 USPQ 2d 1788, 1789 (B.P.A.I. 1986).

Even in cases where a *prima facie* case of obviousness is established, it can be rebutted if Applicant can show that the cited reference, in any material respect, *teaches away* from the claimed invention. *In re Geisler*, 116 F.3d 1465, 43 U.S.P.Q.2d 1362, 1365 (Fed. Cir. 1997) (emphasis added). In the Advisory Action, the Examiner stated: "With respect to the face extension 74, Galloway discloses the importance of having such face extension to provide a smooth transition junction so that the welding zone is moved rearwardly not at the crown/face or face/sole, which will minimize stress at the junction upon ball's impact". In addition Galloway teaches: "Unlike the prior art which has the crown engage the face plate perpendicularly, the present invention has the face member 60 engage the crown 62 along a substantially horizontal plane." (Col. 6, lines 11-14)

A reference may be said to *teach away* when a person of ordinary skill in the art, upon reading the reference, would be led in a direction divergent from the path that was taken by Applicant. *Tec Air, Inc. v. Denso Mfg. Mich. Inc.*, 192 F.3d 1353, 1360, 52 U.S.P.Q.2d 1294, 1298 (Fed. Cir. 1999). One of ordinary skill in the art, reading Galloway, would not be led in the direction of forming thin transition junctions by casting them as part of the club head body and moving the welding away from the transition junctions by placing them on a vertical plane in the face plate about a stamped metal oval impact insert, but rather would be led towards a horizontal weld in the body of the club head.

II. The Examiner Has Failed To Meet The Required Burden Of Proof

As set out above, it is also well established that the burden is on the Examiner to provide some suggestion of the desirability of doing what the inventor has done. To support the conclusion that the claimed invention is directed to obvious subject matter, the primary reference must either (1) *expressly or impliedly suggest the claimed invention* or (2) the Examiner must present a *convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious* in light of the teachings of the prior art references. *Ex parte Clapp*, 227 U.S.P.Q. 972, 973 (Bd. Pat.

App. & Inter. 1985) (emphasis added). Neither of these elements exist here. The Examiner has simply made conclusory assertions without proper foundation.

Moreover, the Examiner must provide evidence that, as a whole, shows that the legal determination sought to be proved (*i.e.*, the reference teachings establish a *prima facie* case of obviousness) is more probable than not. MANUEL OF PATENT EXAMINING PROCEDURE § 2142 (8th ed. 2001). This level of proof has not been established. Not only does the primary reference relied upon not teach the claimed invention, this primary reference *teaches away* from it. The Examiner has failed to provide any teaching that would suggest changing it.

9. CONCLUSION

In accordance with the authority set forth above, and for the facts and reasons fully developed herein, Appellants respectfully request that the decision of the Examiner be reversed in its entirety.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'D. Michael Burns', with a long horizontal flourish extending to the right.

Date: December 17, 2003

D. Michael Burns (Reg. No. 38,400)

Acushnet Company
333 Bridge Street
Fairhaven, MA 02719
(508) 979-3563

APPENDIX A: PENDING CLAIMS

1. (Previously presented) A metal wood golf club head adapted for attachment to a shaft comprising:

 a substantially hollow body welded to a substantially oval shaped stamped metal impact insert;

 the body including a heel portion, a toe portion, a crown portion, a sole plate, a skirt portion connecting the heel portion to the toe portion, and a face perimeter having an opening of a configuration for receiving the stamped metal impact insert;

 an upper section of the face perimeter forming a transition junction with the crown portion, and a lower section of the perimeter face forming a transition junction with the sole plate; and

 the opening of the face perimeter at least about 0.20 inch from either the transition junction at the upper section or the transition junction at the lower section,

 thereby, substantially eliminating welding at the transition junctions.

2-4 (Cancelled)

5. (Previously presented) The golf club head of claim 1, wherein a shell thickness of the face perimeter is approximately 0.08 inch.

6. (Previously presented) The golf club head of claim 5, wherein the hollow body and the insert are made substantially of titanium or titanium based alloy.

7. (Previously presented) The golf club head of claim 6, wherein a variable wall thickness of the insert is approximately 0.10 inch at its center to about 0.09 inch at its outer edge.

8. (Previously presented) The golf club head of claim 7, wherein the insert comprises at least two different radii of curvature for interior and exterior surfaces.

9. (Previously presented) The golf club head of claim 1, wherein the size of the club head is between about 350 to about 500 cubic centimeters.
10. (Original) The golf club head of claim 9, wherein the body and the insert are made from a titanium alloy.
11. (Previously presented) The golf club head of claim 1, wherein the size of the club head is between about 270 to about 500 cubic centimeters.
12. (Original) The golf club head of claim 11, wherein the body is substantially 6-4 titanium alloy and the insert is substantially 15-3-3-3 titanium alloy.
13. (Previously presented) The golf club head of claim 12, wherein the wall of the insert has a uniform thickness of between about 0.100 inch to about 0.125 inch.
14. (Original) The golf club head of claim 1, wherein the size of the club head is between about 230 to 350 cubic centimeters.
15. (Previously presented) The golf club head of claim 14, wherein the wall of the insert has a uniform thickness between about 0.075 inch to 0.105 inch.
16. (Previously presented) The golf club head of claim 14, wherein the club head has a loft being equal to or greater than 13°.
17. (Previously presented) The golf club head of claim 16, wherein the wall of the insert has a uniform thickness, the thickness being between about 0.05 inch to 0.09 inch.
18. (Previously presented) The golf club head of claim 1, wherein the body includes a generally cylindrical hosel extending from the heel portion, an extension of the hosel centerline axis having an intersection point with the sole plate, and a weight element disposed on the sole plate centered at a location substantially rearward from

the intersection point in an area adjacent to the juncture of the heel and skirt portions.

19-20 (Cancelled)

21. (Previously presented) The golf club head of claim 18, wherein the center of the weight element is disposed at a distance greater than about 1.5 inches from the intersection point.

22. (Previously presented) The golf club head of claim 18, wherein the center of the weight element is disposed at a distance greater than about 1.0 inch from the intersection point.

23. (Previously presented) The golf club head of claim 18, wherein the weight element is greater than 16 grams.

24-29. (Cancelled)